

## 1. Entity Information

Applicant Entity Name	Project Name	County	Municipal Area benefited	Planning Region	Project Location - Latitude of Project (Decimal Degrees)	Project Location - Longitude of Project (Decimal Degrees)
Harmony Groves	Harmony Groves Irrigation Efficiency Improvement	Lemon	Harmony Groves (Grove 2)	Lower East Coast	26.493675	-80.329744

Authorized Representative FIRST Name	Authorized Representative LAST Name	Authorized Representative Email Address	Street Address	City	Zip Code	Phone Number
Jane	Richards	jrichards@buww.org	14 Nowhere Ave	Lemonville	55555	555-555-5555

If the Authorized Representative is different from the [Project Manager \(Primary Contact\)](#), please provide the following information for the Project Manager.

Project Manager FIRST Name	Project Manager LAST Name	Project Manager Email Address	Street Address	City	Zip Code	Phone Number
Sam	Gamgee	sgamgee@buww.org	28 Somewhere Ave	Lemonville	55555	999-999-9999

Federal ID Number	Type of Organization/Entity	If applicable, provide the Consumptive Use Permit, etc.
28462145	Agricultural Operator	50-123546

Will this project be completed on state-owned land?	No
---	----

If the applicant is a local government (city/county etc.), please answer the following questions:

Does the applicant have an adopted irrigation ordinance that comports with the District's Year-Round Irrigation Rule?	Not Applicable
If applicable, provide the Irrigation Ordinance number.	
Do you understand if the irrigation ordinance above does not comport with the District's Year-Round Irrigation Rule, the application will be deemed ineligible for funding?	Not Applicable

Does the applicant have an approved Water Supply Facilities Work Plan pursuant to Chapter 163.3177(6)(c), F.S.?	Not Applicable
Does the applicant have a proposed Water Supply Facilities Work Plan that will be approved before March 2, 2023?	Not Applicable

If you answered yes to either of the two previous questions, please provide the following information:

Amendment Number	N/A
Amendment Date (approved or pending approval)	N/A

You have reached the end of this tab. Proceed to the next.

## 2. Project Description

Anticipated Start Date	Anticipated End Date	Is this a multiyear project?	Project Type	Estimated Water Savings (mg)	\$/kgal	Total Project Cost	Requested Funding
10/1/2023	9/30/2024	No	Agricultural Irrigation	57.70	\$0.21	\$74,660	\$32,340

The gray cells above will auto-populate as you provide inputs elsewhere within this application.

**Excel Tip:** You can begin a new paragraph within a cell by holding down the **Alt key and hitting Enter** (return).

<b>Project Description</b> Short Form (Limit to <b>THREE</b> sentences or less)	The project will install remote weather sensing, water level monitoring, and datalogging hardware at four (4) locations in a 2,000 acre citrus grove.
--	---

<b>Project Objective</b> (Limit to <b>ONE</b> sentence)	The objective is to improve irrigation water use efficiency by incorporating soil moisture and climate sensing technology.
--	--

<b>Long-Form Project Description</b> (Scope of the Project)  <b>Include:</b> <b>Item(s) to be purchased/installed/distributed and quantities of each</b>	<p>Harmony Groves is a 2,000 acre citrus grove originally established in 1982. The groves are irrigated throughout the calendar year on an as-needed basis. The workers currently must drive to remote areas to observe site conditions. This leads to apprehensive decision making on irrigation.</p> <p>Based on NRCS Mobile Irrigation Lab recommendations, at each of four (4) sites, we will install one (1) weather station with remote monitoring capabilities via web-based wi-fi applications, (each station will be capable of measuring real time air and wet bulb temperature, wind speed and direction, dew point, and rainfall), and two (2) soil moisture sensors. One (1) water table level transducers and one (1) data logging unit will also be installed. This information will be used to improve utilization and placement of water nutrients, assist real-time irrigation decision-making and reduce excess use. Irrigation runoff will be reduced as irrigation schedules improve. Please see accompanying Mobile Irrigation Lab report for details.</p>
--	--

<b>Location</b>	Harmony Groves, Western Lemon County
<b>Target Group(s) and Size</b>	2,000 acre citrus grove
<b>Acres Affected (if this is an irrigation project)</b>	2,000

<b>Is this a rebate or voucher program?</b>	<b>No</b>
<b>If yes, complete the following:</b>	
<b>a. How many rebates or vouchers in total will be issued within the funding period?<sup>1</sup></b>	
<b>b. What is the maximum number of rebates/vouchers issued to a single participant?</b>	
<b>c. How many dwelling units/facilities will this program attempt to reach <u>at a minimum</u> during the funding period?<sup>2,3</sup> This should be equal to a./b. above.</b>	
<b>d. List any additional types of fixtures or devices, such as, but not limited to, a showerhead or faucet aerator that a participant may receive.</b>	

**Footnotes:**

<sup>1</sup> Do not enter a range. The final reimbursement will be tied to this number.

<sup>2</sup> This question assumes all participants accept the maximum number of allowable rebates/vouchers.

<sup>3</sup> This is the figure you must use in the calculation in your estimated water savings.

## 2. Project Description

Identify the water source that will be conserved.	Utility Water Provider or Water Source
Potable water from a utility at risk of saltwater intrusion based on elevated chloride levels in monitoring wells or within a Restricted Allocation Area (Section 3.2.1 of the Applicant's Handbook for Water Use Permit Applications)	
Potable water from a utility not at risk of saltwater intrusion, or in a Restricted Allocation Area	
Potable water, but not sure if the area is within a Restriction Allocation Area or at risk of saltwater intrusion (Specify the provider utility)	
Surficial well water in the service area of a utility at risk of saltwater intrusion based on elevated chloride levels in monitoring wells	
Surficial well water in the service area of a utility not at risk of saltwater intrusion	
Surficial well water, but unsure if at risk of saltwater intrusion (Specify the water body)	
Water from a canal or stormwater catchment area (such as a man-made lake within a housing development)	Lemon
Reclaimed water	
Other (Specify)	

This section includes additional information requested by the Florida Department of Environmental Protection (FDEP).	
Is this project a continuation of an existing agreement with the FDEP?	No
If yes, FDEP agreement number:	

What is the project delivery method?	Design-Build
If Other, please describe.	

Is this project geographically located within an FDEP-approved Restoration Plan (i.e., Basin Management Action Plan or Reasonable Assurance Plan) area? The following link can be used as an interactive map to identify the BMAP status for the project: <a href="https://floridadep.gov/dear/water-quality-restoration/content/impaired-waters-tmdls-and-basin-management-action-plans">https://floridadep.gov/dear/water-quality-restoration/content/impaired-waters-tmdls-and-basin-management-action-plans</a>	Not Applicable
If yes, name of Restoration Plan:	

If the project is geographically located within a Restoration Plan area, will the project be identified with a project number on the Statewide Annual Report? The following link is for the Statewide Annual Report: <a href="https://floridadep.gov/dear/water-quality-restoration/content/statewide-annual-report">https://floridadep.gov/dear/water-quality-restoration/content/statewide-annual-report</a>	Not Applicable
If yes, Project Number:	
If yes, Unique ID:	

## Project Background

What is the water-related issue?	Over irrigation and wasteful use of water is occurring due to lack of information on site conditions.
Why is the water-related issue a problem?	The current overuse of water can lead to depletion of water supply sources which can result in challenges to meet our irrigation demands in the future
How will this project provide a solution to the problem?	Remote sensing will provide real-time data that will help determine the amount of water needed for irrigation based on site conditions.
What water-related benefits will result from the completion of this project?	The water savings yielded by this project will help preserve our fresh water supply sources.

Will this project result in a fully completed (operational) project?	Yes
--	-----

Will a Florida Licensed Professional Engineer be able to certify work completed?	Not Applicable
--	----------------

Will a Florida Licensed Professional Geologist be able to certify work completed?	Not Applicable
---	----------------

You have reached the end of this tab. Proceed to the next.

### 3. Project Financing

Total Project Cost (\$)	Funding Requested (\$)	Applicant Match (\$)	Third-Party Match (\$)
\$74,660	\$32,340	\$32,340	\$5,000

Has this project received previous SFWMD funding?			Select One
If yes, fill out the table below:			
Year Awarded	Contract Number	Amount Awarded	Amount Spent
2020	460001111	\$18,750	\$18,750

Is the applicant receiving other funds for this project?	Select One
If yes, federal/state/private entity name(s):	If yes, amount(s):
FDACS Citrus Grove Renovation/Re-establishment Program	\$5,000

**You have reached the end of this tab. Proceed to the next.**

#### 4. Project Budget

Project Hardware/Technology Items	Quantity of Items or Rebates	Cost per Item, Rebate, or Voucher	Installation Cost per Item	Total Cost for Each Line
<b>Datalogging System</b>				\$ -
Campbell Scientific Datalogger	4	\$ 1,140.00		\$ 4,560.00
Sierra wireless 4G LTE cellular modem	4	\$ 890.00		\$ 3,560.00
12Vdc 12 ah Sealed Battery w/Mount	4	\$ 100.00		\$ 400.00
Enclosure sealed Mema 4x mount and wiring assembly	4	\$ 690.00		\$ 2,760.00
20Watt Solar panel, pole mount, 15 ft cable	4	\$ 390.00		\$ 1,560.00
<b>Weather Sensors</b>				\$ -
CSI Temp RH sensor 6 ft cable	4	\$ 310.00		\$ 1,240.00
CSI Temp RH Solar rad shield	4	\$ 130.00		\$ 520.00
RM Young Wind Speed/Direction Sensor 15 ft cable	4	\$ 940.00		\$ 3,760.00
Rain gauge, 0.001 Increment, 6" orifice 25 ft cable	4	\$ 425.00		\$ 1,700.00
10 ft tower with base, adjustable mast	4	\$ 860.00		\$ 3,440.00
Sensor crossarm & mounting kit	4	\$ 130.00		\$ 520.00
Grounding Kit	4	\$ 65.00		\$ 260.00
Concrete tower base 2x2x2	4	\$ 3,400.00		\$ 13,600.00
Onsite field installation & programming & training	4	\$ 1,390.00		\$ 5,560.00
<b>Soil Moisture Sensors</b>				\$ -
12cm Soil Water Content Reflectometer Plus with 15ft cable	8	\$ 1,245.00		\$ 9,960.00
Sensor install & trenching	4		\$ 1,900.00	\$ 7,600.00
<b>Water table monitoring</b>				\$ -
Water level transducer with 120 ft cable	4	\$ 815.00	\$ 2,600.00	\$ 13,660.00
				\$ -
				\$ -
				\$ -
				\$ -
				\$ -
				\$ -
				\$ -
				\$ -
				\$ -
				\$ -
				\$ -
<b>Hardware &amp; Installation Total</b>				<b>\$ 74,660.00</b>

You have reached the end of this tab. Proceed to the next.

5a. Estimated Water Savings Indoor & Other

This tab has been created specifically for nonirrigation water conservation projects that may happen in an agricultural or nursery operation. You are required to provide an explanation of how you arrived at your current water use and water savings estimates. District staff will review the estimates provided and may either accept or, if unreasonable, modify them.

Estimated Water Savings Explanation for Other Conservation Project Types

Please enter the following:

Current Water Use		mg
Estimated Post-project Water Use		mg
Potential Savings	0.0	mg

Briefly provide the basis for your Current Water Use estimate (e.g., metered data, water bills, zone use calculations).

Briefly explain the basis for your Post-project Water Use estimate.

You have reached the end of this tab. Proceed to the next.

## 5b. Estimated Water Savings - Irrigation

This tab contains two sections. The first section, "Irrigation System Conversion Projects," is to be used if your project entails an irrigation system conversion.

The second section, "Precision Management Improvements," is to be used if your project entails hardware or technology meant to help better manage your irrigation system.

### Section 1. Irrigation System Conversion Projects

Water Use Permit Number	50-123546
Total permitted acres	
Total irrigated acres affected by this conservation project	
Estimate of supplemental irrigation currently being used on affected acres	mg
Current irrigation method	Select Irrigation Method
New irrigation method per this project conversion	Select Irrigation Method
Estimated average use after project completion	mg
Conservation water savings	mg

Briefly provide the basis for your Current Water Use estimate.

### Section 2. Precision Management Improvements

Project Size	2000.0	acres affected
Current Water Use	823.8	mg
Estimated Post-project Water Use	766.1	mg
Potential Savings	57.7	mg

Briefly provide the basis for your Current Water Use estimate (e.g., metered data, water bills, zone use calculations).

NRCS Mobile Irrigation Lab use of Polysonic flow meters to determine flow from the grove's three pumps (2,710 gpm, 2,654 gpm, and 2,225 gpm) and developed an Irrigation Water Management Plan. Gross daily needs and net irrigation requirements for a dry year were calculated.

Briefly explain the basis for your Post-project Water Use estimate.

The property already uses microspray emitters, so this project will not improve system irrigation efficiency. However, the NRCS Mobile Irrigation Lab report states the addition of the management equipment including soil moisture probes, tensiometers, weather stations, and wireless telemetry is projected to improve the FIRI factor to produce a 7% reduction in water use. The NRCS Mobile Irrigation Lab report will be uploaded with this application.

You have reached the end of this tab. Proceed to the next.

## 6. Cost-Effectiveness Calculator

Please refer to the District's Cooperative Funding Program Guidelines Appendix, Cost-Effectiveness Calculator (\$/kgal)

**Total Cost** per item MUST match costs presented in Tab 4 (Project Budget).

**Service Lives** entered in this table **MUST** come from the table below if project items are included in that table. You **MUST** use the shortest service life if your project includes more than one item on the list.

**Weighted Cost Effectiveness** must be lower than or equal to **\$6.00 k/gal** for eligible projects.

Conservation Items	Total Cost Per Line	Annual Estimated Savings (mgy) From Est. Wat. Save Tab	Service Life (in years, from table below)	Total Project Gallons Saved per Day	Total Gallons Saved over Service Life (MG)	Cost Effectiveness (\$/kgal)
Precision irrigation management equipment	\$74,660	57.7	7	158,082	403.90	\$0.21
				-	-	\$0.00
				-	-	\$0.00
				-	-	\$0.00
				-	-	\$0.00
				-	-	\$0.00
				-	-	\$0.00
				-	-	\$0.00
				-	-	\$0.00
				-	-	\$0.00
	\$74,660	57.7				\$0.21
						(Weighted cost effectiveness for all items)

Outdoor Irrigation Measures	Service Life, in years
Efficient Sprinkler Heads	5
Rain Sensors	2
Soil Moisture Sensors	7
System Design Corrections	20
Weather-based Controllers	10

You have reached the end of this tab. Proceed to the next.



## 7. Ancillary Information

Does any contractor or other affiliate of the applicant have a financial interest in this project, the property associated with this project, or with any party that may profit financially from this project?	No
If yes, list the parties and interests:	
Is the project part of your institution/facility's conservation plan?	Yes
This is a State of Florida reimbursement program. The entire project scope is expected to be completed within the funding period, regardless of amount awarded. There is no guarantee the applicant will be awarded the amount requested. Are budgeted funds available to pay for the entire scope of the project?	Yes
Does the applicant understand that if, for any reason, the project scope is not fulfilled to 100% completion as outlined in the statement of work, the funding amount will be reduced to match the original percentage of funding in the contract/purchase order based on the estimated project cost provided in the application?	Yes
Does the applicant understand that funds are only for expenses incurred during the funding period?	Yes
Does the applicant understand this program is not meant to replace or upgrade equipment that is less than 2 years old?	Yes
Is the property located within the District's boundary?	Yes
Is the property in compliance with the District's regulatory requirements?	Yes
Is the applicant willing to host educational/demonstration activities highlighting the project site at reasonable times and under reasonable conditions? Your answer will not affect your project's eligibility or review.	Yes

**You have reached the end of the application.**  
**Go back and check that all required information has been entered.**  
**It is recommended you review all inputs on all tabs.**